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4401 Great America Parkway
Santa Clara, CA 95054

ATM T1/E1 PMC Module ***Supplement***

NORTEL
NETWORKS™

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USA Requirements Only

Federal Communications Commission (FCC) Compliance Notice: Radio Frequency Notice

Note: This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to Part 15 of the FCC rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy. If it is not installed and used in accordance with the instruction manual, it may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference, in which case users will be required to take whatever measures may be necessary to correct the interference at their own expense.

European Requirements Only

EN 55 022 Statement

This is to certify that the Nortel Networks Passport 5430 Multiservice Access Switch is shielded against the generation of radio interference in accordance with the application of Council Directive 89/336/EEC, Article 4a. Conformity is declared by the application of EN 55 022 Class A (CISPR 22).

Warning: This is a Class A product. In a domestic environment, this product may cause radio interference, in which case, the user may be required to take appropriate measures.

Achtung: Dieses ist ein Gerät der Funkstörgrenzwertklasse A. In Wohnbereichen können bei Betrieb dieses Gerätes Rundfunkstörungen auftreten, in welchen Fällen der Benutzer für entsprechende Gegenmaßnahmen verantwortlich ist.

Attention: Ceci est un produit de Classe A. Dans un environnement domestique, ce produit risque de créer des interférences radioélectriques, il appartiendra alors à l'utilisateur de prendre les mesures spécifiques appropriées.

EC Declaration of Conformity

This product conforms (or these products conform) to the provisions of Council Directive 89/336/EEC and 73/23/EEC. The Declaration of Conformity is available on the Nortel Networks World Wide Web site at <http://libra2.corpwest.baynetworks.com/cgi-bin/ndCGI.exe/DocView/>.

Japan/Nippon Requirements Only

Voluntary Control Council for Interference (VCCI) Statement

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Canada Requirements Only

Canadian Department of Communications Radio Interference Regulations

This digital apparatus (Passport 5430 Multiservice Access Switch) does not exceed the Class A limits for radio-noise emissions from digital apparatus as set out in the Radio Interference Regulations of the Canadian Department of Communications.

Règlement sur le brouillage radioélectrique du ministère des Communications

Cet appareil numérique (Passport 5430 Multiservice Access Switch) respecte les limites de bruits radioélectriques visant les appareils numériques de classe A prescrites dans le Règlement sur le brouillage radioélectrique du ministère des Communications du Canada.

Canada Requirements Only *(continued)*

Canada CS-03 Rules and Regulations

Notice: The Industry Canada label identifies certified equipment. This certification means that the equipment meets telecommunications network protective, operational and safety requirements as prescribed in the appropriate Terminal Equipment Technical Requirements document(s). The Department does not guarantee the equipment will operate to the user's satisfaction.

Before installing this equipment, users should ensure that it is permissible to be connected to the facilities of the local telecommunications company. The equipment must also be installed using an acceptable method of connection. The customer should be aware that compliance with the above conditions may not prevent the degradation of service in some situations.

Repairs to certified equipment should be coordinated by a representative designated by the supplier. Any repairs or alterations made by the user to this equipment, or equipment malfunctions, may give the telecommunications company cause to request the user to disconnect the equipment.

Users should ensure for their own protection that the electrical ground connections of the power utility, telephone lines and internal metallic water pipe system, if present, are connected together. This precaution may be particularly important in rural areas.

Caution: Users should not attempt to make such connections themselves, but should contact the appropriate electric inspection authority, or electrician, as appropriate.

Notice: For equipment using loopstart lines, please note that the Ringer Equivalence Number (REN) assigned to each terminal device provides an indication of the maximum number of terminals allowed to be connected to a telephone interface. The termination on an interface may consist of any combination of devices subject only to the requirement that the sum of the Ringer Equivalence Numbers of all the devices does not exceed 5. The REN is located on the "FCC Rules Part 68" label located on the bracket of the module, or on the back of the unit.

Canada CS-03 -- Règles et règlements

Avis: L'étiquette d'Industrie Canada identifie le matériel homologué. Cette étiquette certifie que le matériel est conforme aux normes de protection, d'exploitation et de sécurité des réseaux de télécommunications, comme le prescrivent les documents concernant les exigences techniques relatives au matériel terminal. Le Ministère n'assure toutefois pas que le matériel fonctionnera à la satisfaction de l'utilisateur.

Avant d'installer ce matériel, l'utilisateur doit s'assurer qu'il est permis de le raccorder aux installations de l'entreprise locale de télécommunication. Le matériel doit également être installé en suivant une méthode acceptée de raccordement. L'abonné ne doit pas oublier qu'il est possible que la conformité aux conditions énoncées ci-dessus n'empêche pas la dégradation du service dans certaines situations.

Les réparations de matériel homologué doivent être coordonnées par un représentant désigné par le fournisseur. L'entreprise de télécommunications peut demander à l'utilisateur de débrancher un appareil à la suite de réparations ou de modifications effectuées par l'utilisateur ou à cause de mauvais fonctionnement.

Pour sa propre protection, l'utilisateur doit s'assurer que tous les fils de mise à la terre de la source d'énergie électrique, des lignes téléphoniques et des canalisations d'eau métalliques, s'il y en a, sont raccordés ensemble. Cette précaution est particulièrement importante dans les régions rurales.

Avertissement: L'utilisateur ne doit pas tenter de faire ces raccordements lui-même; il doit avoir recours à un service d'inspection des installations électriques, ou à un électricien, selon le cas.

Avis: Veuillez prendre note que pour tout appareillage supportant des lignes de type "loopstart," l'indice d'équivalence de la sonnerie (IES) assigné à chaque dispositif terminal indique le nombre maximal de terminaux qui peuvent être raccordés à une interface. La terminaison d'une interface téléphonique peut consister en une combinaison de quelques dispositifs, à la seule condition que la somme d'indices d'équivalence de la sonnerie de tous les dispositifs n'excède pas 5. Le REN figure sur l'étiquette "FCC Rules Part 68" située sur le support du module ou à l'arrière de l'unité.

FCC Part 68 Compliance Statement

This equipment complies with Part 68 of FCC Rules. All direct connections to telephone network lines must be made using standard plugs and jacks compliant with FCC Part 68. Please note the following:

1. You are required to request service from the telephone company before you connect the unit to a network. When you request service, you must provide the telephone company with the following data:
 - When you request T1 Service, you must provide the telephone company with
 - The Facility Interface Code
 - Provide the telephone company with all the codes below:
 - 04DU9-BN (1.544 MB, D4 framing format)
 - 04DU9-DN (1.544 MB, D4 framing format with B8ZF coding)
 - 04DU9-1KN (1.544 MB, ESF framing format)
 - 04DU9-1SN (1.544 MB, ESF framing format with B8ZF coding)
 - 04DU9-1ZN (1.544 MB, ANSI ESF and ZBTISI without line power)
 - The telephone company will select the code it has available.
 - The Service Order Code(s) (SOC): 6.0Y
 - The required Universal Service Order Code (USOC) jack: RJ48C
- When you request ISDN “U” Interface Service, you must provide the telephone company with
 - The Facility Interface Code: 02IS5
 - The Service Order Code(s) (SOC): 6.0F
 - The required Universal Service Order Code (USOC) jack: RJ49C
- When you request ISDN “S/T” Interface Service, you must provide the telephone company with
 - The Service Order Code(s) (SOC): 6.0P
 - The make, model number, and FCC Registration number of the NT1

Note: ISDN S/T cannot be directly connected to the network.

 - When you request Primary Rate ISDN Service, you must provide the telephone company with
 - The Facility Interface Code: 04DU9-1SN (1.544 MB, ESF framing format with B8ZF coding)
 - The Service Order Code(s) (SOC): 6.0Y
 - The required Universal Service Order Code (USOC) jack: RJ48C

2. Your telephone company may make changes to its facilities, equipment, operations, or procedures that could affect the proper functioning of your equipment. The telephone company will notify you in advance of such changes to give you an opportunity to maintain uninterrupted telephone service.
3. If the unit causes harm to the telephone network, the telephone company may temporarily discontinue your service. If possible, they will notify you in advance, but if advance notice is not practical, you will be notified as soon as possible and will be informed of your right to file a complaint with the FCC.
4. If you experience trouble with the unit, please contact the Nortel Networks Technical Solutions Center in your area for service or repairs. Repairs should be performed only by service personnel authorized by Nortel Networks.

United States	1-800-2LANWAN
Valbonne, France	33-4-92-96-69-68
Sydney, Australia	61-2-9927-8800
Tokyo, Japan	81-3-5740-1700

-
5. You are required to notify the telephone company when you disconnect the unit from the network.

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The ATM T1/E1 PMC Module provides a T1 or E1 interface for ATM WAN services.

In this guide, the Passport 5430 Multiservice Access Switch is referred to as the Passport 5430.

Before You Begin

This guide is intended for qualified service personnel who are installing the Passport 5430 for the first time or who need to install or replace any Passport 5430 customer-replaceable unit (CRU). A qualified service person should have appropriate technical training and experience and be aware of the hazards involved in installing and replacing CRUs.

Text Conventions

This guide uses the following text conventions:

italic text

Indicates new terms, book titles, and variables in command syntax descriptions.

Acronyms

This guide uses the following acronyms:

CRU

customer-replaceable unit

LED

light emitting diode

PMC	PCI mezzanine card
WAN	wide area network

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- The “CD ROMs” section lists available CDs.
- The “Guides/Books” section lists books on technical topics.
- The “Technical Manuals” section lists available printed documentation sets.

How to Get Help

If you purchased a service contract for your Nortel Networks product from a distributor or authorized reseller, contact the technical support staff for that distributor or reseller for assistance.

If you purchased a Nortel Networks service program, contact one of the following Nortel Networks Technical Solutions Centers:

Technical Solutions Center	Telephone Number
Billerica, MA	800-2LANWAN (800-252-6926)
Santa Clara, CA	800-2LANWAN (800-252-6926)
Valbonne, France	33-4-92-96-69-68
Sydney, Australia	61-2-9927-8800
Tokyo, Japan	81-3-5402-7041

Chapter 1

Using the ATM T1/E1 PMC Module

This document supplements *Installing and Operating the Passport 5430 Multiservice Access Switch*. Follow the hardware installation steps in that manual, then refer to this document for information specific to the ATM T1/E1 PMC module.



Warning: The ATM T1/E1 PMC module is designed to operate in the Passport 5430 Multiservice Access Switch only. Attempting to use the ATM T1/E1 PMC Module in any other product may be hazardous and invalidates the regulatory approval.

Installing the ATM T1/E1 PMC Module

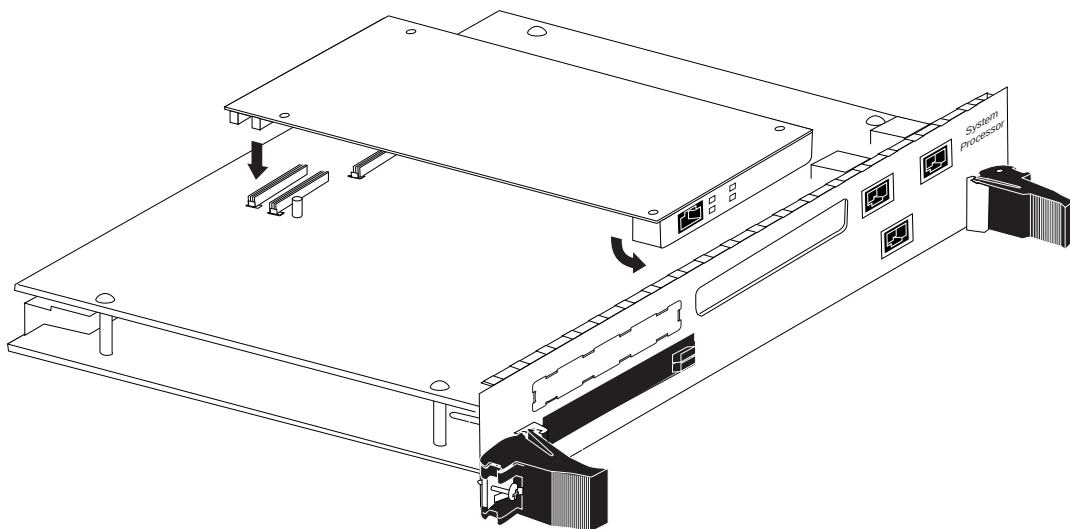
To install a PMC module on the system processor card:

1. **Attach an antistatic wrist strap.**



Caution: Electrostatic discharge can damage hardware. You must wear the antistatic wrist strap whenever you handle printed circuit boards. Refer to the instructions enclosed with your antistatic wrist strap to attach it.

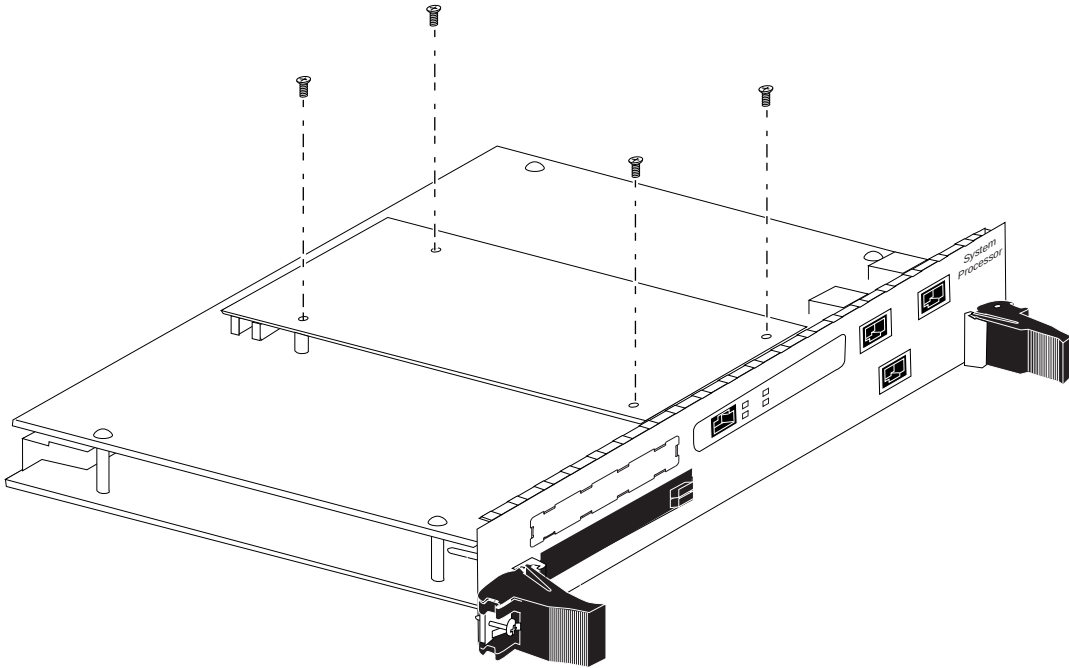
2. **Holding the PMC Module with the connectors facing down, slide it into the opening on the system processor card** [\(Figure 1-1\)](#).
3. **Press down to seat the PMC module firmly into the sockets** [\(Figure 1-1\)](#).



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Figure 1-1. Installing the PMC Module

4. Insert and tighten the screws to secure the PMC module to the system processor card ([Figure 1-2](#)).



FBR0055A

Figure 1-2. Securing the PMC Module to the System Processor Card

5. Install the system processor card into the chassis.

For instructions, see *Installing a System Processor Card in the Passport 5430 Multiservice Access Switch*.

Attaching Cables

The ATM T1/E1 PMC module provides one T1 or E1 interface. To connect to the ATM T1 interface, see the next section, [“Connecting to the ATM T1 Interface.”](#)

To connect to the ATM E1 interface, see [“Connecting to the ATM E1 Interface”](#) on [page 1-5](#).

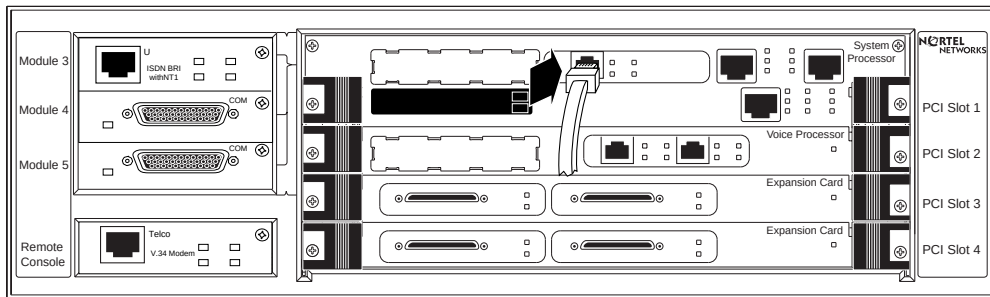
Connecting to the ATM T1 Interface

To connect to the ATM T1 interface on an installed ATM T1/E1 PMC module:

1. **Route the cable through the cable loom slot corresponding to PCI slot 1.**

For instructions, see *Installing and Operating the Passport 5430 Multiservice Access Switch*.

2. **Insert the RJ-48C cable connector into the ATM T1/E1 interface** ([Figure 1-3](#)).



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Figure 1-3. Connecting the ATM T1 Cable

3. **Connect the other end of the RJ-48C cable to the T1/E1 communications device.**
4. **Arrange the cable in the cable loom.**

For instructions, see *Installing and Operating the Passport 5430 Multiservice Access Switch*.

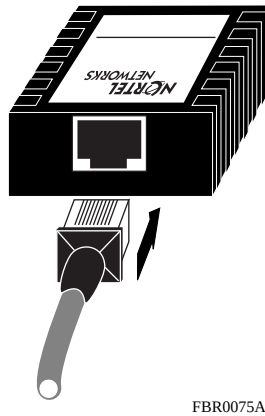
Connecting to the ATM E1 Interface

To connect to the ATM E1 interface on an installed ATM T1/E1 PMC module:

1. **Route the cable through the cable loom slot corresponding to PCI slot 1.**

For instructions, see *Installing and Operating the Passport 5430 Multiservice Access Switch*.

2. **Insert the RJ-48C cable connector into the ATM T1/E1 interface ([Figure 1-3](#)).**
3. **Connect the other end of the RJ-48C cable to the coaxial-to-twisted pair cable adapter (Balun) ([Figure 1-4](#)).**

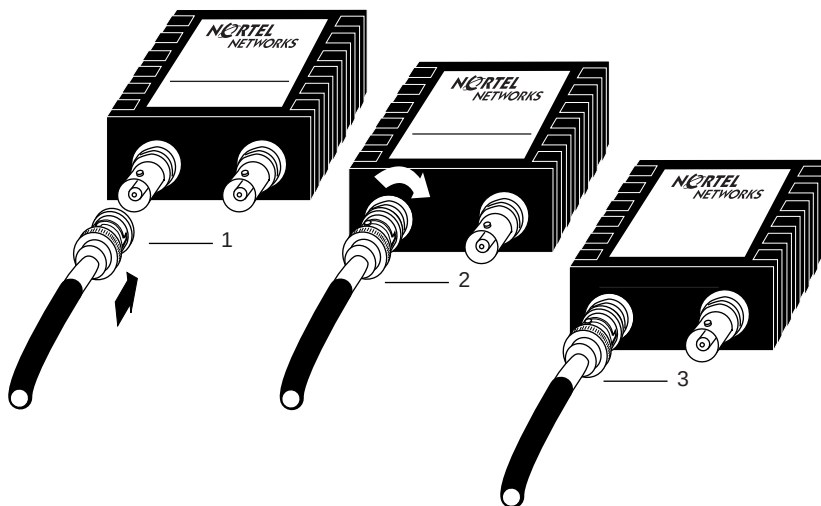


FBR0075A

Figure 1-4. Attaching the Coaxial-to-Twisted Pair Cable Adapter

4. **Push the coaxial cable from the E1 communications device onto the connector on the adapter.**

5. Turn the coaxial cable to the right until the key on the connector clicks into the notch on the coaxial cable ([Figure 1-5](#)).



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Figure 1-5. Connecting a Coaxial Cable to the Coaxial-to-Twisted Pair Cable Adapter

6. **Arrange the cable in the cable loom.**

For instructions, see *Installing and Operating the Passport 5430 Multiservice Access Switch*.

Interpreting LEDs

The ATM T1/E1 PMC module has four LEDs for each port ([Figure 1-6](#)).

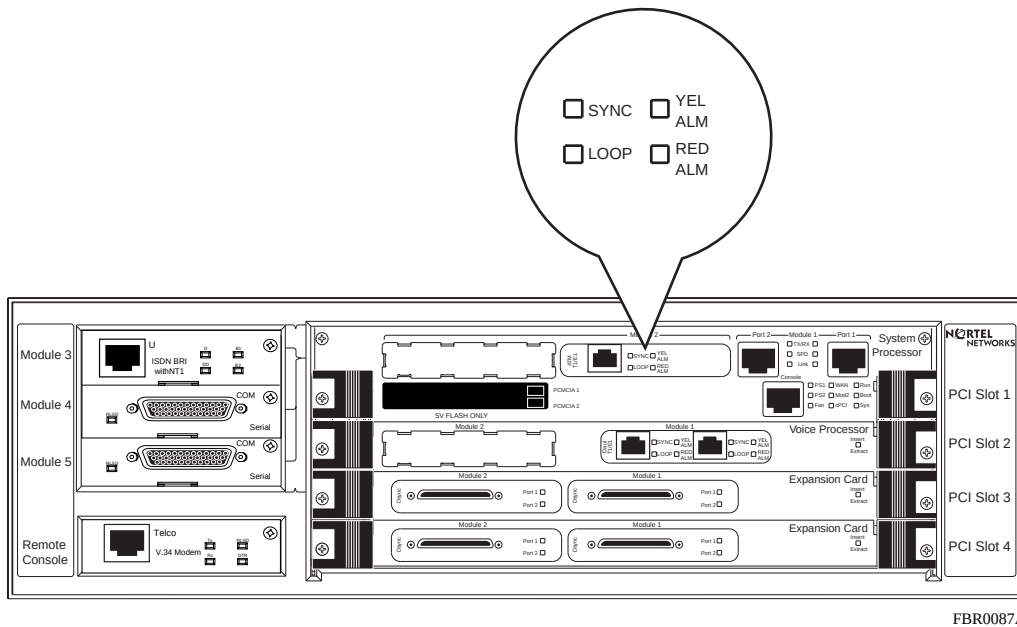


Figure 1-6. ATM T1/E1 PMC Module LEDs

[Table 1-1](#) describes the function of the ATM T1/E1 PMC module's LEDs.

Table 1-1. ATM T1/E1 PMC LEDs

LED	State	Meaning
Sync	Off	Port is not synchronized to the network.
	On (green)	Port is synchronized to the network.
Loop	Off	Port is not in line loopback or payload loopback condition.
	On (green)	Port is in line loopback or payload loopback condition.
Yel Alm	Off	Port is not in a yellow alarm condition.
	On (amber)	Port has received a yellow alarm condition.
Red Alm	Off	Port is not in a red alarm condition.
	On (red)	Port has received a red alarm condition.

Completing Software Configuration

Once you have successfully installed the Dual T1/E1 PMC module, complete the following software configuration tasks using instructions found in the documentation:

Configuration Task	Location of Instructions
If this is a first time installation, you must quick-start your Passport 5430.	<i>Installing and Operating the Passport 5430 Multiservice Access Switch</i>
Modify the Passport 5430 configuration file to: • Add the ATM T1/E1 PMC module and enable default ATM T1/E1 PMC module software services.	• <i>Configuring and Managing Routers with Site Manager</i> • <i>Using the Bay Command Console (BCC™)</i> • <i>Configuring ATM Services</i>

For the latest information, be sure to review the release notes and documentation change notice for your version of BayRS software.